Prosperity Requires Being Bold: Integrating Education and the Workforce for a Bright Texas Future

The Tri-Agency Report to the Office of the Governor from the

Texas Education Agency

Texas Higher Education Coordinating Board

Texas Workforce Commission

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Executive Summary

Prosperity and innovation in Texas depend on extensive and meaningful collaboration among the prekindergarten through 12th grade (P-12) school system, institutions of higher education, and industry. In March 2016, Governor Greg Abbott established the Tri-Agency Workforce Initiative and tasked the Commissioners of the Texas Education Agency (TEA), the Texas Higher Education Coordinating Board (THECB), and the Texas Workforce Commission (TWC) to work together on five charges centered on developing strong links between education and industry, with the goal of helping Texas grow in economic prosperity. Specifically, the governor laid out these charges:

- **Charge 1.** *Commissioners should identify and advance public and higher education initiatives that make college more affordable for families and help students enter the workforce more quickly with marketable skills.*
- **Charge 2.** *Commissioners should work with industry and local stakeholders to assess local workforce needs and identify innovative workforce development models that directly coordinate with industry partners and promote postsecondary success. The Commissioners should include career and technical education (CTE) and science, technology, engineering, and mathematics (STEM) education models in their assessment.*
- **Charge 3.** *Commissioners should evaluate current agency efforts, as well as state and local web-based education and career awareness systems in an effort to better link students, parents, and educators to the broad array of high-demand jobs in this state and the educational requirements to secure those opportunities.*
- **Charge 4.** *Commissioners should identify gaps in services to Texas veterans, advance strategies to enhance their education and employment opportunities, and develop solutions to ensure a seamless and accelerated transition back into the Texas workforce.*
- **Charge 5.** *Commissioners should make recommendations that build the skills of the Texas workforce and advance regional economic expansion, job creation, and the goals of 60x30TX.*

To begin addressing the charges, the commissioners of the three agencies held regional meetings across Texas in Midland, San Antonio, Houston, Dallas, El Paso, McAllen, Tyler, and Austin from April through June 2016. The commissioners met with regional leaders from education, industry, government, and nonprofits to understand the state's workforce needs at a regional level.

Regional leaders suggested placing greater emphasis on critical STEM fields in P-12, creating more access to higher education for economically disadvantaged and underrepresented students, creating more public/private partnerships, and increasing paid internships, apprenticeships, and mentorships. They also proposed expanding and improving student advising, training and hiring people with disabilities, mentoring and guiding foster youth into higher education, helping students in rural areas gain the skills to support their families, encouraging entrepreneurship programs (including in rural areas), and better transitioning veterans into the workforce. The commissioners learned more about exemplary regional models among high schools, colleges, universities, and industry for educating and training students in high-demand fields. They heard concerns about unfilled jobs in high-demand fields and about closing the gaps in the educational pipeline needed to fill those jobs.

Based on the conversations at regional meetings and conversations with community leaders, the commissioners addressed the governor's charges by developing several comprehensive statewide prime recommendations to help Texas achieve pre-eminence in our global economy. The recommendations hinge on aligning current P-16 education to workforce development and encouraging the state and each region to envision how to build local economies, industries, and jobs of the future. Building tomorrow's industries begins with developing a vision, then strengthening the P-16 education pipeline to support those industries.

Fifteen years ago, graduates did not seek careers as information security analysts, cloud computing specialists, or social media managers. Those careers did not exist then. Developing and acting on strategic programs that meet current workforce needs while focusing on building the economy of the future will help regions create the educational pipelines and private/public partnerships to meet future needs. As part of moving in this new direction, P-16 educators will need to ingrain in students the expectation of several careers in one lifetime and the need for lifelong learning.

The state's new higher education plan, *60x30TX*,[1] will play a key role in linking education and the workforce while supporting efforts to help more Texans achieve a higher education and boost Texas in the global economy. The overarching goal of the plan is for 60 percent of 25-34 year olds in the state to hold a certificate or degree by 2030. When *60x30TX* was written, only 38 percent of Texans in this age group had met this goal, and only 35 percent had an associate degree or higher.

During the recovery period from January 2010 to January 2016, the U.S. economy added 11.6 million jobs. Of those jobs, 11.5 million went to workers with some college education. Of the 7.2 million jobs lost during the recession, workers with only a high school education or less lost 5.6 million and recovered only about 1 percent of the 11.6 million new jobs.[2] These sobering numbers make reaching the overarching goal of *60x30TX* vitally important if Texas is to enhance its prosperity and achieve pre-eminence in a global economy.

To address the governor's charges and reap benefits for all Texans, the commissioners developed the following four prime recommendations to ensure the future economic competitiveness of Texas:

- Identify statewide initiatives for the next generation that will make Texas the clear leader in targeted fields and position the state for economic pre-eminence.
- Strengthen prekindergarten through high school academic instruction to establish students' foundational skills in math, science, language arts, and social studies so that students graduate high school career or college ready and are prepared for lifetime learning.
- Build a proactive, ongoing partnership among the TEA, THECB, TWC, and other stakeholders to align the educational goals of Texas with the state's higher education plan of *60x30TX*, which aims for 60 percent of 25- to 34-year-olds to hold either a certificate or degree by 2030, with the goal of growing the state's workforce, industry, and the economy.
- Identify services for Texas veterans and advance strategies to enhance their education and employment opportunities, while developing solutions to ensure a seamless and accelerated transition back into the Texas workforce.

[1] A PDF of *60x30TX* is available here

[2] From *America's divided recovery: College haves and have nots*.

Texas faces a significant challenge in helping all students in P-12 schools become career and college ready in areas that address both current and future workforce needs. The state also must help workers quickly retool their skills when their jobs are affected by ever-changing technology. This report addresses the governor's charges with an eye toward meeting those challenges and preparing Texans for future careers and industries.

This report discusses new models for integrating P-12 education and higher education's academic goals with technical workforce needs and for meeting the goals of *60x30TX*. The common thread among the report's recommendations and initiatives is the commitment of the TEA, THECB, and TWC to enter into an ongoing and long-term partnership for the purpose of making Texas the best place to learn, work, and do business.

Introduction

Prosperity and innovation depend on extensive and meaningful collaboration among the P-12 school system, institutions of higher education, and industry. In March 2016, Governor Greg Abbott tasked the Commissioners of the Texas Education Agency (TEA), the Texas Higher Education Coordinating Board (THECB), and the Texas Workforce Commission (TWC) to work together on five charges centered on developing strong links between education and industry, with the goal of helping Texas grow in economic prosperity. Specifically, the governor laid out these charges:

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The Regional Meetings

To begin addressing the charges, the commissioners of the three agencies held eight regional meetings in Midland, San Antonio, Houston, Dallas, El Paso, McAllen, Tyler, and Austin from April through June 2016. Andres Alcantar, Commissioner Representing the Public (TWC); Ruth Hughs, Commissioner Representing Employers (TWC); Julian Alvarez III, Commissioner Representing Labor (TWC); Mike Morath, Commissioner of Education (TEA); and Raymund Paredes, Commissioner of Higher Education (THECB) attended the meetings. They posed questions and listened to responses and concerns from industry leaders, business executives, and entrepreneurs, including leaders from historically underutilized businesses; ISD superintendents; economic and workforce development leaders; directors of community and nonprofit organizations; elected officials; higher education administrators; and other stakeholders.

The commissioners heard about exemplary regional models among high schools, community colleges, universities, and industry representatives for educating and training students in high-demand fields. The models represent many public/private partnerships and include such efforts as building the educational workforce for the aerospace and aviation industry, teaching elementary school students computer programming languages to encourage future development of innovative products and entrepreneurship, and developing a two-year nursing program concurrent with high school that allows students to receive high school diplomas and sit for nursing board examinations in the same month.

The commissioners also heard concerns about unfilled jobs in technology, manufacturing, the financial sector, construction, transportation, engineering, nursing, and other in-demand and high-demand fields. Commissioners heard about the need to close gaps in the educational pipeline in order to fill in-demand jobs, as well as the need to retrain workers and ensure students graduate with the marketable skills necessary to succeed in business and industry.

Commissioners listened to the successes and recommendations of leaders from organizations that help veterans transition from active military service to civilian life. In short, the responses, concerns, and models mentioned in this report represent only a sampling of what commissioners heard at regional meetings and in conversations and other meetings surrounding those events. Some ideas suggested by regional leaders include:

- Placing greater emphasis on computational reasoning and critical STEM fields in P-12
- Creating more access to higher education for economically disadvantaged and underrepresented students
- Promoting more public/private partnerships to provide regions future employees
- Increasing paid internships, apprenticeships, and mentorships
- Expanding and improving student advising in middle school, high school, and college
- Training and hiring people with disabilities
- Mentoring and guiding foster youth into higher education
- Helping students in rural areas gain the skills to support their families

The regional meetings represented formal collaborations between industry and education. At the meetings, education and industry representatives began discussing ways to create a seamless system for developing a skilled Texas workforce that will drive local, regional, and statewide economies and encourage innovation and lifelong learning. Ideas and discussions centered on better linking education to the workforce in regions and throughout the state as a whole.

The Challenge of *60x30TX*

The state's new higher education plan, *60x30TX*, will play a key role in linking education and the workforce and supporting efforts to help more Texans achieve a higher education credential. The overarching goal of the plan is for 60 percent of 25- to 34-year-olds in the state to hold a certificate or degree by 2030. When *60x30TX* was written, only 38 percent of Texans in this age group had a higher education credential, and only 35 percent had an associate

degree or higher.[3] Developed with input from school administrators, higher education representatives, community leaders, private industry partners, elected officials, former faculty, and other stakeholders, *60x30TX* establishes goals for higher education that will help Texas secure its place in a global economy and attract new revenue, spurring innovation, research, and job growth and bettering the lives of Texas families from all backgrounds.

Ambitious and bold, the overarching goal of *60x30TX* equates to an educational moonshot. In November 2015, when Governor Abbott endorsed the plan at Collin College, he said, "Texas will become the home for innovation and intellectual capital. The standard that this group [higher education] sets does set high expectations. But I've come to believe that people live up to the expectations that are set." The governor's comments and other efforts across the state, including the tri-agency meetings, signal that work is underway to propel Texas toward greater prosperity.

To meet the goals of *60x30TX*, Texas must improve student outcomes and maximize the potential of every child in its public school system. The proportion of school-aged children who are economically disadvantaged in Texas is currently 58.8 percent, 12 percentage points higher than 20 years earlier.[4] Texas faces a challenge in helping this growing population of economically disadvantaged students graduate career and college ready from high school in areas that prepare them for current workforce needs and the jobs of the future.

Bolstering the Texas Workforce

Texas has one of the most robust and diverse economies in the nation. Indeed, Texas is home to industries in advanced technologies and manufacturing, energy and petroleum refining, aerospace and defense, and information and computer technology, and the state is making strides in the healthcare industry, including biotechnology and life sciences. The state's continued growth in the demand for housing and infrastructure also has increased demand for skilled labor in the construction and transportation industries.

Texas has the advantage of a workforce that is comparatively younger than other states and growing in numbers. The P-12 public school system is an enormous human resource, with the potential to support both existing and burgeoning industries. It serves more than 5.23 million students,[5] roughly two and a half times the population of neighboring New Mexico. The potential of that number cannot be ignored, which makes a case for building the best educational systems in P-16, as well as the best public and private partnerships to benefit all students. The state has extraordinary opportunities to advise and serve all Texas students, including economically disadvantaged students, rural students, foster children, students with disabilities, dropouts, and other at-risk student populations. Increased and enhanced counseling and mentoring for all students from prekindergarten through higher education will be a key component to unlocking students' potential, along with teaching them marketable skills and providing paid internships, apprenticeships, and mentorships.

Each of those options is needed to serve the greatest number of students. Internships, for example, often co-exist with coursework or occur during the summer. Apprenticeships often last longer than internships and are accompanied by coursework leading to a license in a specific

[3] Source: THECB data. As of 2015, the baseline data for *60x30TX*, 40.3 percent of 25-34 year olds had a higher education credential.

[4] TEA's Pocket edition 2014-15 Texas public school statistics. [single-page edition], TEA's 1995 Pocket edition. Source: PEIMS data.

[5] From TEA's Pocket edition 2014-15 Texas public school statistics (see footnote 4). Source: PEIMS data.

field or trade, and mentorships allow professionals working in a field to guide and advise students about their career paths. Through industry partnerships with education, these experiences can help even the most economically disadvantaged students gain essential workplace experience.

In addition to its vast number of students, Texas is home to another valuable resource. In fall 2014, the U.S. Department of Veterans Affairs data showed there were nearly 1.7 million veterans in Texas, second only to California.[6] The skills that veterans acquire in the military – discipline, teamwork, and a strong work ethic – make them ideal candidates for many Texas employers. Better assistance for veterans transitioning from military service to the civilian workforce is good for Texas and good for Texas businesses.

Many positive efforts to address the range of populations in Texas is already underway among the P-12 school system, institutions of higher education, industry, and the state and is borne out, in part, by the data:

- Undergraduate awards in Texas increased every year from 2001-2015. By fiscal year 2015, the state had exceeded the final target by nearly 49,000 awards, or 23 percent.[7]
- African American, Hispanic, Asian, and white participation rates in Texas for students taking the SAT and ACT is at or near all-time highs.[8]
- In 2015, in fourth-grade mathematics, Texas ranked 11th nationally, up from 27th in 2013. According to The National Report Card, "Texas fourth and eighth grade students taking the 2015 National Assessment of Educational Progress (NAEP) in mathematics posted scores higher than the national average … Scores for white, African American, and Hispanic students also exceeded scores by their national counterparts in NAEP fourth-grade mathematics."[9]
- Level 1 workforce certificates (as defined in the THECB's *Guidelines for Instructional Programs in Workforce Education* manual) also have grown from 13,353 to 32,007 from 2000 to 2015. These certificates are a good option for students looking to get into the workforce quickly and to develop marketable skills.[10]
- As of July 2016, the state had experienced job growth in 14 of the past 15 months.[11]

These positive indicators provide more reasons to build greater links between education and the workforce for greater numbers of Texans.

[6] Department of Veteran Affairs data from the National Center for Veterans Analysis and Statistics.
[7] *Closing the Gaps* final progress report, THECB, 2016.
[8] TEA press release "SAT, AP exam rates continue to climb," Sept. 3, 2015; *Texas Education Today* newsletter article, "Number of Texas students taking ACT sets new mark," Sept. 2015. Source: College Board and ACT data.
[9] TEA press release: "2015 NAEP math scores strong for Texas students." Source: NAEP data.
[10] Adult learners and non-traditional students, June 21, 2016, THECB presentation (slide 6). Source: THECB data.
[11] TWC press release, July 22, 2016: "Texas economy adds 7,200 jobs in June." Source: TWC and U.S. Department of Labor data.

A Growing and Changing Student Population

Over the last 20 years, the number of students coming from economically disadvantaged backgrounds has risen in the state's public P-12 schools. For Texas eighth graders qualifying for free or reduced-price lunches, only about 11 percent go on to attain a postsecondary credential within 11 years after leaving eighth grade.[12]

For the state to remain competitive both now and in the future, the leaders of the TEA, THECB, and TWC agree that the P-12 school system, two- and four-year colleges, adult education literacy (AEL) services, and industry-led workforce training programs will need

to make substantial efforts to ensure all students – including those who are economically disadvantaged or in rural areas – have access to a wide variety of educational and workforce programs, especially in high-demand occupations.

Texas has the largest number of rural P-12 students in the nation, more than the combined total rural enrollments of 17 other states. Among the roughly 834,000 rural students, more than 43 percent are considered economically disadvantaged.[13] Helping economically disadvantaged students across the state succeed is paramount to helping Texas reach its economic goals and to becoming a national and world leader in new and emerging – and even yet-to-exist – sectors and industries. Establishing new regional centers of education in rural areas and across the state based on the Early College High School model will help low- and middle-income students acquire skills valued by employers. The centers could help accelerate completion in high-demand fields and make postsecondary credentials more accessible and affordable and could include transfer agreements with regional colleges and universities.

Greater numbers of adult students who are not recent high school graduates are also entering Texas institutions of higher education. In fall 2015, 17.8 percent of university students and 29.1 percent of technical and community college students fell into this category,[14] suggesting that undergraduate education in Texas is undergoing dramatic change. In addition to serving older students, higher education increasingly serves a student population that is poorer and more diverse. This enrollment trend toward greater numbers of economically disadvantaged and traditionally underrepresented students in higher education is expected to continue as demographics shift in the state.

Texas must appropriately prepare all students for our diverse workforce by providing them with strong foundational skills in math, science, language arts, and social studies in order to graduate them career and college ready and prepared for lifelong learning. Helping those students enter community colleges and universities while supporting them through the completion of certificates and degrees will mean demonstrating that higher education is one of the best paths toward greater social and economic mobility. Striving toward educational parity between economically disadvantaged students and their non-disadvantaged counterparts is important for developing a Texas workforce that is adaptable, innovative, and diverse.

[12] Eighth grade cohort rates (2004-2015) found in 2016 Texas public higher education almanac, (p. 14). Source: TEA and THECB data.

[13] 2012 Rural and Community Trust' report "Why rural matters: The condition of rural education in the 50 states" (p. 70). Source: National Center for Education Statistics and U.S. Census Bureau data.

[14] Adult learners and non-traditional students, June 21, 2016, THECB presentation (slide 5). Source: THECB data.

A Vision for the Future

In *The Industries of the Future*, innovation expert Alec Ross describes the industries that will dominate the 21st century. Sectors such as genomics, big data, and artificial intelligence will create many new jobs for the states and countries that recalibrate their economies and incubate those industries. For Texas to be among those that achieve pre-eminence in the global economy, regional and statewide leaders will need a bold vision for industries that currently may not exist.

Fifteen years ago, newspapers employed thousands of people in pressrooms and printing plants, car mechanics used hand tools and mechanical skills to perform diagnostics, and phone repair workers serviced landlines. Fifteen years ago, postsecondary graduates did not seek careers as information security analysts, cloud computing specialists, or social media managers because those careers did not exist. Today, many pressrooms produce news solely online, mechanics perform high-tech diagnostics with computers and install software updates to accommodate sophisticated automobiles, and phone repair workers assist customers through cellular retail centers and virtual customer service guides. Those changes and the many that will follow, including driverless vehicles, robotic devices, and materials written by natural language machines, signal a strong need for individuals who possess skills in information technology and automation.

Developing visions and producing action plans that meet current needs while also looking to the future will enable regions to create the educational pipelines and private/public partnerships to better adapt to a rapidly changing world. Tools such as the "future state vision" process - a method for determining what and where an organization or area wants to be by a future date - could help regional planners to select new industries to pursue. For its part, the state will need to continually evaluate emerging trends or sectors such as robotics, cybersecurity, genomics, and big data, and find ways to foster and implement solutions that support those emerging industries. Texas will need to develop a statewide vision, as well as discover new ways to support its diverse geographic areas to develop regional visions for the future that support new industry and job creation objectives. Those combined efforts will ensure that Texas is the best place to learn, work, and do business.

Through regional visions that connect to a larger statewide vision, leaders will need to help Texas address the statistics that follow. These statistics – some statewide and some national – call for charting new and innovative educational paths to workforce success in a highly competitive global economy:

- In the report *America's Divided Recovery: College Haves and Have Nots*, national workforce expert Anthony Carnevale writes that, during the recovery period from January 2010 to January 2016, the U.S. economy added 11.6 million jobs; of those jobs, 11.5 million went to workers with some college education. Of the 7.2 million jobs lost during the recession, workers with only a high school education or less lost 5.6 million and recovered only about 1 percent of the 11.6 million new jobs.[15]
- Of Texas high school students in 2014 who took the ACT, SAT, and Texas Success Initiative (TSI) Assessment, only 26 percent (ACT), 32 percent (SAT), and 29.9 percent (TSI) were college ready.[16]

[15] *America's divided recovery: College haves and have nots* (p. 3). Source: U.S. Census Bureau, Current Employment Statistics data

[16] West Texas legislative summit – The future of higher education, August 4, 2016, THECB presentation (slide 18). Source: 2015 THECB data.

- Industries that employ managerial and professional workers, such as consulting and business services, healthcare services, financial services, education services, and government services, accounted for 28 percent of the workforce in 1947 and have grown to encompass 46 percent of the workforce today.[17]
- The first and overarching goal of *60x30TX* calls for at least 60 percent of Texans ages 25-34 to have a certificate or degree by 2030. As mentioned, when *60x30TX* was written only about 38 percent of Texans in this age range had a certificate[18] or degree.
- A total of 58.8 percent of Texas public school students qualify for free or reduced-price lunches.[19]
- About 3.8 million or 15 percent of the state's total population are adults who lack a high school diploma.[20]
- According to the Texas Workforce Investment Council's Report, "People with Disabilities: A Texas Profile," of Texas youth attending secondary school in 2014, 6 percent had a disability; of students attending colleges or universities in 2014, 3.4 percent had a disability. The same year, among Texas youth not participating in the labor force, 8.4 percent had a disability.[21]
- Only 55 computer science teachers were produced statewide in 2015.The state should train and certify computer science teachers with a state-level computer science certification aimed at doubling the number of instructors who utilize industry-standard tools and resources.[22]
- More students enrolled in higher education have financial need, as determined by Pell eligibility – 32 percent in 2000, 49 percent in 2014.[23]

The state has challenges. Texas needs many more workers with Level 1 and 2 certificates, associate degrees, bachelor's degrees, and master's degrees to meet workforce needs, especially in critical, high-demand careers. Preparing those workers to attain certificates and degrees starts with guiding students from P-12 into higher education and through to successful completion.

For the next generation, as well as the one currently entering the workforce, knowing how to adapt and retool one's skills will be as important as the knowledge and skills initially acquired to get a better job. For current and future workers who lose jobs as the result of new technology or other advances, the state needs to expand the number of accelerated retraining programs intended to help laid-off workers move into new careers quickly. The 2008 recession hugely affected workers without postsecondary credentials, and the recovery that followed largely forgot them.[24] Helping those workers retool and learn new

[17] *America's divided recovery: College haves and have nots* (p. 4). Source: U.S. Census Bureau, Current Employment Statistics data, and Current Population Survey.

[18] Certificates refer to those defined in the Guidelines for instructional programs in workforce education (GIPWE).

[19] TEA's Pocket edition 2014-15 Texas public school statistics (p. 1). Source: PEIMS data.

[20] Adult learners and non-traditional students, June 21, 2016, THECB presentation (slide 4). Source: U.S. Census data.

[21] http://gov.texas.gov/files/twic/Disabilities_Profile.pdf, June 2016 Update, (pp. 29-30). Source U.S. Census data, American Community Survey.

[22] From TEA data discussed at commissioners' meeting at TEA, July 2016.

[23] Adult learners and non-traditional students, June 21, 2016, THECB presentation (slide 6). Source: THECB data.

[24] *America's divided recovery: College haves and have nots* (p. 4).

skills is essential for maintaining a strong Texas economy. As Governor Abbott stated at the Tri-agency Education and Workforce Summit in September 2016, "For Texas to be the undisputed center for innovation and intellectual capital in this decade and beyond, we need to accelerate learning to the speed of business and technology." The state has an opportunity to become not only the best place for efficiently preparing students for postsecondary credentials but also for providing accelerated training programs for adults who need to retool or learn new skills to reenter the workforce.

While there is much to be proud of in Texas P-12 schools, at colleges and universities, and within the partnerships among industry, community organizations, and Workforce Solutions Offices, data show there is also much to accomplish. Fortunately, Texans love a challenge.

Teaching Marketable Skills

Creating more paid internships, apprenticeships and other applied learning opportunities is critical to the state's future success and is a centerpiece of this report. The need to provide training opportunities that coincide with the P-12 systems and institutions of higher education was discussed at every regional meeting, not only as a way to engage students and provide them with the skills they need to succeed, but also as a way for employers to gain skilled employees who can fill in-demand and high-demand jobs and help businesses grow. Paid internships also allow students – especially those who cannot afford to take on unpaid learning opportunities – to gain job skills before graduation and to expand opportunities for success after graduation. The state must focus on providing meaningful career training and work for all students, including those with disabilities, so that all students gain the marketable skills employers desire.

In addition to paid internships, P-12 schools and institutions of higher education have a key role to play. Clearly, many students in Texas are graduating from high schools, two-year colleges, and four-year universities with marketable skills. Students, however, are not always aware of the value of these skills nor able to articulate them to employers. P-12 schools and two- and four-year institutions of higher education can help make students more aware of the skills they learn. Some marketable skills learned in P-12 and higher education will include work habits and knowledge not easily aligned with a specific job or industry. For example, many industry-recognized curricula and liberal arts studies hone lifelong job skills, such as critical thinking, and help create more flexible and resourceful individuals, which will allow them to adapt nimbly to the jobs of the future while meeting the needs of today.

More Affordable Higher Education

A 2012 national Pew survey found that 57 percent of prospective students believed universities were no longer a good value because of the cost, and 75 percent deemed college unaffordable.[25] Texas can reduce the cost of higher education for students and families and help ensure students graduate more quickly and with marketable skills.

At the regional meetings, much discussion focused on students graduating college and career ready from high school. Many high school students assume that if they graduate from high school they are ready to attend college. When they arrive at college, however, data from the THECB from 2013-14 show that, among all high school graduates attending two- or four-year colleges directly from high school, about 27.3 percent of students need remediation, which adds time and cost for courses that do not count toward degrees. Encouraging students

[25] College graduation: Weighing the cost … and payoff. Source: Pew Research Center data.

to reach college-ready goals, take rigorous high school classes, and graduate career and college ready could reduce higher education costs and the time it takes to graduate. One way to ensure students graduate career and college ready is to continue to transparently hold P-12 school districts and schools accountable in the state's P-12 accountability system and implement the state's new A-F campus accountability system.

To address rising college costs, the state could expand its offerings of low- or no-cost options for taking college-level coursework in high school. Under the authority of Texas Education Code (TEC), Section 29.908(b) and Texas Administrative Code (TAC), Section 102.1091, Early College High Schools (ECHS) require a partnership between a high school and a college to allow students facing socioeconomic barriers to earn a high school diploma and 60 college semester credit hours (SCHs) before graduation. ECHS also provide counselors and other academic and social support services to help students succeed. For the 2015-16 school year, there were 154 ECHS operating in Texas, with four designated as career and technical education ECHS.[26]

Using the ECHS model as a starting point, TWC, TEA, and the THECB are currently making grants available for Texas Industry Cluster Innovative Academies, a next-generation ECHS. The Innovative Academies leverage the efficiency of the existing ECHS frameworks in Texas but add an additional industry component. To receive an Innovative Academy grant, a high school must have a partnership that includes a regional employer and a community college or university. As part of the new model, industry will be able to contribute to curriculum content and design, as well as employ students through paid internships, externships, mentorships and apprenticeships. Innovative Academies will support efforts to better align educational opportunities with market activity in different industry sectors.

Dual credit enrollment also provides high school students with college credit by allowing students to enroll in a single course and earn credit that counts for both high school and college. Dual credit courses provide an opportunity to lower the cost of higher education for students by allowing them to graduate from college earlier. To ensure that more dual credit courses not only transfer to institutions of higher education but also count toward students' degrees, more information – especially online – needs to be easily accessible for students, parents, guardians, and other stakeholders to help avoid lost time and money. Improved and enhanced advising and more easy-to-access online information will help counselors, parents, students, and other stakeholders receive pertinent information about dual credit courses. While dual credit courses promise excellent value to students, it is important to note that the quality of academic dual credit courses must be rigorous and college-level for students to benefit. If academic dual credit courses expand to the point that rigor decreases, then Texas colleges and universities may not accept those courses as credit toward a degree.

Advising and more targeted information will help students and the state save money on the number of semester credit hours (SCHs) students in Texas take to complete a degree. In 2015, THECB data showed that students in Texas averaged 90 SCHs to complete a two-year degree and 139 SCHs to complete a four-year degree, though most programs of study require only 60 and 120 SCHs, respectively. Excessive SCHs for degree completion in Texas – some of it due to courses that do not transfer – contribute to student debt, fewer students graduating with postsecondary credentials, and students taking longer to graduate. This report proposes expanding and enhancing advising at all levels of P-16 to address this issue.

Expanded and enhanced advising and easy-to-find online information about colleges and careers and the transferability of college courses that count toward degrees must be considered

[26] TEA press release, "TEA announces early college high school designations,"April, 7, 2015.

throughout the educational pipeline. Better communication among ISDs, institutions of higher education, parents, students, and other stakeholders will help students decrease the SCHs they take to earn a degree, thereby reducing time to degree while saving money for families and the state. Expanding higher education Fields of Study (FOS) and Programs of Study (POS) also would result in cost savings for students and the state because they establish *de facto* statewide articulation agreements between two- and four-year institutions. Both FOS and POS create seamless curricular pathways from high school to postsecondary institutions and between two-year and four-year institutions for students pursuing specific career fields and academic disciplines.

Advanced Placement (AP) courses and exams also may provide students with college credit while in high school and help save money. Students and parents must be made more aware that, starting in fall 2016, Texas colleges and universities must grant college credit for a score of 3 or higher on most AP exams.

Adult students who wish to return to higher education and complete degrees can save money by entering a competency-based program, such as the Texas Affordable Baccalaureate (TAB) program, which allows students to pay a set fee per term and to progress through as many modules in that term as their competencies allow. A student with many years of experience in technology or management may be able to complete a related course in those areas within weeks, barring the need to take a semester-long course. As a result, the TAB program can reduce the cost of higher education by thousands of dollars.

Competency-based education or other alternative pathways could meet the needs of students who are working full-time. Studies show that a high percentage of two-year college students are supporting families and working full-time. Additionally, many individuals transitioning from different careers need more opportunities to acquire skills efficiently and transition back into the workforce. Given the ever-changing global economy and technological advances, students of all backgrounds and ages must be educated with the expectation of having several careers over a lifetime and the necessity of lifelong learning.

The Prime Recommendations for Sustaining Texas Economic Competitiveness

In the recommendations and initiatives that follow, the commissioners have addressed the governor's charges by developing four prime recommendations that cut across all five charges, enabling the three agencies, educators, industry leaders, and other stakeholders to work toward common goals that reap benefits for all Texans. As part of this effort, the three agencies must commit to the Texas Competitive Workforce Partnership Compact, requiring mutual establishment of strategic goals, the development of statewide initiatives, and high levels of support and coordination on initiatives such as *60x30TX*. The *prime recommendations* are followed by multiple *major initiatives* that are perceived as the most impactful to the larger prime recommendation. A second layer of *recommendations* and *initiatives* follow that will help to support the prime recommendation and major initiatives.

Prime Recommendation 1

IDENTIFY STATEWIDE INITIATIVES FOR THE NEXT GENERATION THAT WILL MAKE TEXAS THE CLEAR LEADER IN TARGETED FIELDS AND POSITION THE STATE FOR FUTURE ECONOMIC PRE-EMINENCE.

Major Initiatives to Support This Recommendation

1. **Advance a statewide vision that establishes Texas as the world leader in research and development and drives the Texas economy to greater heights in the future.** Consider, for example, expanding and linking the university medical and science research platforms across the state, forming an Innovation Triangle in Texas. This statewide coordination could launch Texas research hospitals into fields already identified as key industry sectors. (https://texaswideopenforbusiness.com/industries/advanced-tech-manufacturing). The state could also identify other areas of targeted pre-eminence, driving the economy into the next century and making Texas the best place to learn, work, and do business.

2. **Promote statewide and regional industry clusters and objectives that support a variety of businesses and regional job creation.** Launch the Texas Industry Clusters and Careers marketing campaign to promote the state's industry clusters through industry-aligned partnerships and industry-specific campaigns to continuously build and maintain a world-class workforce. Establish Texas as a leader in accelerated retraining programs, as well as building and expanding high-demand occupational pathway opportunities for students.

3. **Encourage statewide and regional creativity and innovation to attract venture capital to the state to help foster the development of new business and industries in Texas.** The state has seen a large drop in venture capital investments since the late 1990s and early 2000s and has an opportunity to regain ground and compete with other populous states and countries. Through collaborative education and workforce efforts, the state has an opportunity to found new industries that position Texas as the premier investment place for future venture capital.

4. **Develop and deploy specific strategies, leveraging regional best practices, to increase entrepreneurial activity and increase small business expansion.** Focus on advancing efforts for growth of women-owned businesses and promote entrepreneurial activity in rural regions of the state to continue to spur job creation.

Additional Recommendations

a. **Identify and replicate successful public/private partnership (P3s) models and focus on developing more industry-aligned career pathways, credentials with marketable skills, and efficient stackable program opportunities.**

Initiatives to Support Recommendation

- **Substantially increase paid internships, apprenticeships, externships, and other meaningful applied workplace learning opportunities** for students in both colleges and high schools. In addition, launch the Texas Industry Internship Challenge to significantly increase the number of high school and college internships, such as paid internships and externships, that augment apprenticeships – including during the summer – in high-demand industry clusters and occupations that provide students with course credit and emphasize strong work habits. Work to more uniformly grant academic credit for those workplace learning opportunities.

- **Launch the Transition Foster Youth initiative** to form a partnership among Texas Foster Care Transition Centers, local workforce development boards, community or technical colleges, schools, and industry to assist the approximately 30,500 current foster children,[27] as well as former foster children, and help them complete a high school diploma or its equivalent, obtain a high-demand skills certification, and receive career guidance. Ensure students in, or formerly in, foster care are aware of the Texas tuition and fee waiver program to help them enroll in a postsecondary institution (TEC, Section 54.367). It is important that students in, or formerly in, foster care know that they are part of *60x30TX* and the state's aspirations.

- **Build credentials at each educational level** with the aim of reducing coursework duplication and time to obtain subsequent degrees. **Streamline credential pathways through the P-16 continuum** to ensure that secondary education graduation plans, including endorsement coursework, prepare high school graduates for completing a postsecondary credential. Also, create pathways such as apprenticeship programs to Texas' two year community, technical and four year institutions via articulation agreements for college credit.

b. **Determine supply-demand skill challenges in each region of the state – especially in STEM and CTE – and establish partnerships among employers, the public, and higher education to implement solutions that address skills gaps and improve STEM and CTE education. The Jobs and Education for Texans (JET) Grant program is an example of a program that is working to address in- demand skills.**

[27] KidsCount.org data center. Source: Texas Department of Family and Protective Services data.

Initiatives to Support Recommendation

- **Require regional workforce entities to identify in-demand skills by enhancing supply and demand tools and capabilities.** Publish periodic Top 10 and Top 25 Hot Jobs lists in each region and statewide.
- **Ensure students with disabilities acquire specific training and certification opportunities in high-demand occupations.** Launch a statewide campaign to promote the hiring of people with disabilities, e.g., starting with a month focused on hiring people with disabilities and supported by other promotional efforts. Work in partnership with the Governor's Committee for People with Disabilities, the Texas School for the Blind, and the Texas School for the Deaf.
- **For students not planning on pursuing a postsecondary credential, such as full-time working students, adult learners, and others, emphasize information about Level 1 certification and increase Level 1 certification attainment.** Level 1 certifications are affordable and achievable in one year, allowing students to enter the workforce quickly with greater earning power to support themselves and their families.
- **Initiate regional *60x30TX* projections, which highlight state and local efforts to meet the goals.** Create a *60x30TX* calculator portal that can be used by each region to establish and monitor *60x30TX* goals and attainment matrices. Regional P-16 councils could be a mechanism for achieving the *60x30TX* regional projections.

c. To accelerate connections between workers seeking jobs and growing businesses seeking employees, WorkInTexas should be replaced with a robust, leading-edge tool that reflects current technology and is customized to the needs of the Texas workforce and economy. Though best in class when built over a decade ago, WorkInTexas needs enhancements that are responsive to business and job seeker requirements in today's economy.

Prime Recommendation 2

STRENGTHEN PREKINDERGARTEN THROUGH HIGH SCHOOL ACADEMIC INSTRUCTION TO ESTABLISH STUDENTS' FOUNDATIONAL SKILLS IN MATH, SCIENCE, LANGUAGE ARTS, AND SOCIAL STUDIES SO THAT STUDENTS GRADUATE CAREER AND COLLEGE READY AND ARE PREPARED FOR LIFETIME LEARNING.

Major Initiatives to Support This Recommendation

1. **Raise student computational skills to make Texas No. 1 in mathematics in the nation.** Building upon Texas' Math Academies – the new teacher professional development tool passed by the Legislature in 2015 and established by TEA in summer 2016 – Texas should provide Math Innovation Zone grants to incentivize school districts to adopt comprehensive, proven, high-quality, and blended-learning math programs for all K-8 classrooms.

2. **Hold P-12 schools accountable for student performance using measures that include college readiness and closing student achievement gaps.** Transparently and consistently provide student outcomes on key student performance measures, including college readiness, to all stakeholders. Update the College and Career Readiness Standards (CCRS), with an awareness of how college readiness and career readiness connect and intersect. Emphasize career and technical education standards and Level 1 certificates to address the ever-changing economic environment. To help address workforce needs that require both college ready and career ready students, involve members of the business community in the CCRS updating process. Incorporate the updated CCRS into the Texas Essential Knowledge and Skills (state's P-12 curriculum).

3. **Improve the state's teacher ranks through better recruitment (including alternative certifications), preparation, and in-service training (e.g., Teacher Academies), and highlight the value of the profession in both P-12 schools and in colleges and universities.** In higher education, employ High-Impact Practices (HIPs), which are evidence-based teaching and learning practices shown to improve learning and persistence for postsecondary students from many backgrounds. Also, improve and expand professional development for K-20, and develop expertise among faculty in higher education about the best practices for student learning.

Additional Recommendations

a. Ensure P-12 students have access to rigorous and high-demand dual credit, career and technical education (CTE), and advanced placement (AP) courses. Also work to ensure that courses count toward students' certificates or degrees. Access is especially important in rural and economically disadvantaged communities.

Initiatives to Support Recommendation

- **Expand access to dual credit and AP courses for rural and economically disadvantaged students** through teacher AP incentive programs and the Texas Virtual School Network to increase the participation of those high school students in dual credit and other college-level courses. Evaluate current dual credit courses for an appropriate level of rigor, and provide strong incentives in the state's school accountability system for offering high-quality dual credit, CTE, and AP courses. Develop ways (e.g., websites) for students and parents to receive information about dual credit options that will *transfer* and *count* toward specific certificates or degrees at institutions of higher education, similar to "truth-in- lending" statements.

b. Improve, expand, and replicate innovative STEM and CTE programs in P-12, and expand STEM and CTE course sequences and student pathways, especially in rural areas. Encourage schools, higher education, and industry to collaborate and expand sequenced course offerings in high-demand fields.

Prime Recommendation 3

BUILD A PROACTIVE, ONGOING PARTNERSHIP AMONG THE TEA, THECB, TWC AND OTHER STAKEHOLDERS TO ALIGN THE EDUCATIONAL GOALS OF TEXAS WITH THE STATE'S HIGHER EDUCATION PLAN OF *60x30TX*, WHICH AIMS FOR 60 PERCENT OF 25- to 34-YEAR-OLDS TO HOLD EITHER A CERTIFICATE OR DEGREE BY 2030, WITH THE GOAL OF GROWING THE STATE'S WORKFORCE, INDUSTRY, AND THE ECONOMY.

Major Initiatives to Support This Recommendation

1. **Focus on providing thorough education and career guidance through enhanced opportunities for students in middle school through college:** (1) Develop a statewide online advising tool for counselors, students, parents, and other stakeholders that will help P-16 students – especially students who are struggling, students who are economically disadvantaged, students with disabilities, or students in foster care – make meaningful and achievable college or career plans; (2) expand high school student advising programs such as Advise TX, which works to increase the number of low-income, first-generation college, and underrepresented high school students who enter and complete a postsecondary education; (3) advise students entering institutions of higher education more effectively to drive course selection and completion tied to specific careers, educational endpoints, and high-demand occupations; (4) encourage career exploration opportunities for all students by exposing them to labor market information related to jobs in the STEM and IT sector to encourage student attainment in high-demand occupations; and (5) demonstrate strategies to co-locate Texas Workforce Specialists at high school campuses to provide guidance and information regarding high-demand careers, including middle skills jobs and training opportunities with apprenticeships, trade schools, community colleges, and employers.

2. **Expand the development of adult learners, high school dropout recovery programs, and achievement models** (e.g., adult charter schools), **and develop practices to encourage higher education "stop outs" with more than 50 semester credit hours to return and complete a degree or certificate.** Expand Grad TX, which helps stop outs to return to universities to finish their bachelor's degrees. Partnerships with current employers also may help advance completion opportunities.

3. **Launch and fund grants for Texas Industry Cluster Innovative Academies.** These academies build on the existing Early College High School model and require key partnerships among high schools, regional employers and industry, and four-year universities to provide opportunities for students to acquire dual credit, certifications, and degrees, as well as internship and mentorship opportunities, in high-demand occupations in key regional industry clusters.

Additional Recommendations

a. **Promote innovation in P-16, through mechanisms such as Early College High Schools with a CTE focus (e.g., Industry Innovative Academies), competency-based education, experiential learning, and alternative pathways.**

Initiatives to Support Recommendation

- **Develop strategies to ensure that courses, credentials, experiential learning, and military training transfers and count toward degrees** at community colleges, technical schools, career schools, and postsecondary institutions, and develop regional articulation agreements that include high schools and the military, in addition to community colleges and regional universities. Make higher education more *affordable*, flexible, and *stackable* through instructional models and schedules that support students, especially working students and adult learners, and respond to the current needs of industry. Use innovative approaches for content delivery and scheduling (e.g., block scheduling) and higher education assessment to improve completion and reduce student cost.

- **Make higher education more affordable for students by:** (1) supporting innovative approaches for more affordable credentials, (2) funding grants for eligible students in higher education, and (3) reducing the time it takes to complete a degree, e.g., through alternate degree pathways such as Texas Affordable Baccalaureate programs.

b. Improve the marketable skills of students graduating from high school and college to include those necessary for workforce success, such as teamwork, critical thinking, personal responsibility, and problem-solving. Communicate acquired marketable skills to students, families, and the workforce.

Initiatives to Support Recommendation

- **Embed marketable skills into the Texas Essential Knowledge and Skills** (state P-12 curriculum) from prekindergarten-12th grade, and **expand marketable skills in the Texas Core Curriculum** (higher education curriculum) and coursework.

- **Ensure marketable skills are integrated into P-12 curricula** so that students can demonstrate and communicate those skills through established mechanisms, e.g., classroom assignments, projects, grades, etc.

- **Align the P-12 accountability system with the *60x30TX* accountability system.**

c. Through a tri-agency collaboration among TEA, TWC, and THECB, develop a comprehensive, complementary, and aligned suite of technology tools and applications to communicate education and workforce data in an audience-appropriate manner to a variety of stakeholders.

Initiatives to Support Recommendation

- As part of a collaborative technology plan, **develop a statewide online education and career advising tool for counselors, students, and parents, and other stakeholders, that will help P-16 students** – especially students who are struggling, economically disadvantaged, foster children, or children with disabilities – **make meaningful and achievable postsecondary or career plans**. In addition, encourage student attainment in high-demand occupations and help students select dual credit courses based on future plans**.** Include the

following information: (1) an individualized career pathway generator that helps students select a career and then helps them determine the P-16 courses required to be successful, earn a certificate, or enter a college or university, (2) existing and anticipated employment opportunities in local communities and across Texas, which directly align with state and regional objectives; (3) anticipated earnings in different careers; (4) local, regional, and statewide career training and certification programs, requirements, costs, and options; (5) local, regional, and statewide high school to career and college articulation agreements and efficient stackable degrees; (6) endorsements under the Foundation School Program offered by school districts related to postsecondary college and/or career options and (7) the cost, time, and expense of different career and educational options.

As a complement to the technology offerings, **the state should also continue career fairs sponsored by local workforce development boards and offered in partnership with local employers** as a means to highlight the broad array of occupations available to Texas students. The technology plan, coupled with applied learning opportunities and related campaigns to highlight careers and industries in Texas, will provide a stronger basis for students, parents, and teachers to understand the opportunities available.

d. Improve academic preparation and academic support for students to enter and complete higher education.

Initiatives to Support Recommendation

- Scale up and share practices that **support students in their academic preparation for postsecondary education**.
- **Expand high-quality education programs for educationally underserved adults**, including people with disabilities.
- Scale up and share practices that **support underprepared students to increase persistence and completion and reduce their time to degree**.

Prime Recommendation 4

IDENTIFY SERVICES FOR TEXAS VETERANS AND ADVANCE STRATEGIES TO ENHANCE THEIR EDUCATION AND EMPLOYMENT OPPORTUNITIES, AND DEVELOP SOLUTIONS TO ENSURE A SEAMLESS AND ACCELERATED TRANSITION BACK INTO THE TEXAS WORKFORCE.

Major Initiatives to Support This Recommendation

1. **Ensure a seamless transition of service members into the civilian, education, and employment communities by providing enhanced employment services.**
   - **Create the *Operation Welcome Home* program to better meet the needs of transitioning service members at military installations in Texas by providing enhanced employment services.** The goal will be to build strong partnerships between Military Transition Centers and the Texas Workforce Commission's Local Workforce Development Boards (Boards) to assist in referring transitioning service

members who are within 180 days of separation. The program will enhance the ability of the local Boards and community partners to provide Texas specific employment services or services in one of the specified tracks – education, career technical training, or entrepreneurship.

- **Establish the *Welcome Home Transition Alliance* to promote a partnership with military installations.** The Alliance will be comprised of TWC and representatives from the 11 Boards with military installations, the Texas Veterans Commission, and the Texas Department of Licensing and Regulation. The Alliance will encourage the participation of military installations. They will collaborate on addressing the needs of transitioning service members and facilitate ongoing coordination to improve employment outcomes.

- **Enhance Skills Development opportunities for transitioning service members by establishing the *Skills for Transition* program.** The *Skills for Transition* program will work with separating service members who plan to remain in Texas. The *Skills for Transition* program will complement the efforts of existing transition programs and provide training opportunities to service members focused on skills associated with employment in high-growth, high-demand occupations. Boards will work together to ensure they are aware of opportunities throughout the state, and through the Workforce Solutions network, and will assist them in transitioning to any community in Texas. The Skills for Transition program will be a resource for the Workforce Solutions Office and workforce partner staff working with service members 180 days prior to their separation, and post-transition.

- **Support for military families.** This initiative will focus on providing employment assistance to military spouses who are experiencing challenges in obtaining employment, obtaining the appropriate licensure or certifications, or obtaining new skills to compete in the job market. Local Workforce Development Boards will provide job search assistance, assessment of skills, labor market information, resume writing and interview skills, and support training in targeted occupations.

Additional Recommendations

a. **Replicate models on a statewide level that assign mentors to veterans to help them translate military resumes/experience into civilian resumes/experience.**

b. **Expand College Credit for Heroes – a partnership between the Texas Workforce Commission and the Texas Higher Education Coordinating Board – that helps active duty, former, and retired military personnel receive college credits for their service.** As part of this initiative, transition veterans into competency-based education and affordable baccalaureate programs that offer academic credit for experiential learning.

c. **Expand Troops to Teachers, and develop Troops to Teaching Assistants.**

d. **Encourage veterans to test their college readiness by taking the Texas Success Initiative (TSI) assessment and waiving the fees for the test.**

Conclusion

Texas must continue to look for ways to develop skilled workers to support all sectors of its economy, as well as develop near- and long-term visions based on new and emerging industries. To support this vision, Texas will need to strike the right balance of hope and urgency as it forges new statewide and regional models for workforce development and educational achievement. Regional leaders across the state will need to collaborate and make careful decisions about the future, then collaboratively plan and implement the necessary educational pipelines to make the statewide and regional visions a reality.

To support those visions, industry partners and companies of all sizes will need to help align P-12 and higher education with the workforce. These collaborations will be especially important for places with fewer opportunities for advancement and/or with large populations of economically disadvantaged families.

The governor's charges make it clear that the state must focus on all Texans and all regions as it looks at strategies for workforce development and economic growth. Solutions for a bright and prosperous Texas future will come from educators, employers, government officials, communities, and others working together. Those stakeholders must dedicate resources to invest in skills that are meaningful for current and future jobs. Their investments – our investments – will advance the statewide goals of *60x30TX*, expand the Texas economy, create job growth, and help build a prosperous future for every family that is proud to call Texas home.

Acronyms Used in This Report

ACT	American College Testing Program
AP	Advanced Placement
CBO	Community-Based Organization
CCRS	College and Career Readiness Standards
CTE	Career and Technical Education
ECHS	Early College High School
FOS	Fields of Study
HIPs	High-Impact Practices
ISD	Independent School District
JET	Jobs and Education for Texans
LWDB	Local Workforce Development Boards
PEIMS	Public Education Information Management System
POS	Programs of Study
SAT	Scholastic Assessment Test
SCHs	Semester Credit Hours
STEM	Science, Technology, Engineering and Mathematics
TAB	Texas Affordable Baccalaureate
TAC	Texas Administrative Code
TEA	Texas Education Agency
THECB	Texas Higher Education Coordinating Board
TEC	Texas Education Code
TSI	Texas Success Initiative
TWC	Texas Workforce Commission

60×30TX

Texas Higher Education
Coordinating Board